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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,288	10/30/2000	Wen-Yin Liu	MSI-605US	1430

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EXAMINER

TO, BAOQUOC N

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/702,288

Applicant(s)

LIU ET AL.

Examiner

Baoquoc N To

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Oct 29, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 43-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 5.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Claims 1-44 are presented for examination.

Election/Restrictions

2. Restriction to one of the following invention is required under 35 U.S.C. 121

Group I. Claims 1-42 are drawn to searching multimedia objects using a keyword and content features, which is classified in Class 707, subclass 3.

Group II. Claims 43-44 are drawn to creating a user interface to allow the user to browse and sending feedback to the system, which is classified in Class 345, subclass 700.

3. Inventions I and II are related as subcombinations disclosed as usable together a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I is drawn to searching and retrieving the multimedia by a keyword and content features. The created user interface in the invention II is utilized to allow the user to browse the multimedia objects and send user's feedback to the system relating the multimedia objects. See M.P.E.P 806.05(d)

4. Because of the inventions are distinct for the given reasons and have acquired in a separate status in the art as show by their different classification, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and the search required for Group I is not required Group II, restriction for examination purpose as indicated is proper.

6. During the telephone conversation with Mr. Lewis C. Lee, Reg. No. 34,656 on October 29, 2002, a provisional election was made to prosecute the invention of Group I, claims 1-42. Affirmation of this election must be made by applicant in replying to this office action. Claims 42-44 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amano et al. (A flexible content-based image retrieval system with combined scene description word, page 201-208, June 17-23, 1996, Multimedia Computing and System) in view of Graham et al. (US. Patent No. 6,369,811).

Regarding on claims 1 and 9, teaches a method comprising:

identifying, in response to a search query, first multimedia objects having an associated keyword that matches a keyword in the search query and second multimedia objects that have content features similar to those of the first multimedia objects;

presenting the first and second multimedia objects to a user [fig. 4 and 5, right column, page 204];

Amano does not explicitly teach monitoring feedback from the user as to which of the first and second multimedia objects are relevant to the search query; and annotating one or more of the multimedia objects, which are deemed relevant by the user, with keyword. However, Graham teaches, "the modification may occur in the background or may involve explicit user feedback input. The locations of concept of interest determined by pattern identification stage 620 are monitored by profile updating stage 634. Profile updating stage 624 notes the proximity of other keywords and key phrase within each analyzed document to the location of concepts of interest. If particular keyword or key phrases are always near a concept of interest, the structure and contents of belief system 700 are updated in the background without the user input by profile updating data. This could mean changing probability values, introducing a new connection between a subconcept and concept, or introducing a new keyword or key phrase" [col. 7, lines 52-65]. This teaches monitoring feedback and annotation process. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham in to Amano because by utilizing monitoring user's feedback and an automatic annotator would allow the system to finds the keyword that best described the multimedia object and allowing the user retrieves more precise result when searching.

Regarding on claim 2, Graham teaches maintaining associations between the keywords and the multimedia objects, the associations being weighted to indicate how relevant the keywords are to the multimedia objects [col. 8, lines 2-6].

Adjusting the weights of the associations based on the user's feedback [col. 8, lines 10-13].

Regarding on claim 3, Graham teaches the adjusting comprises increasing a weight of an association between the keyword and a particular multimedia object that is deemed relevant by the user [col. 8, lines 6-10].

Regarding on claim 4, Graham teaches the adjusting comprises decreasing a weight of an association between the keyword and a particular multimedia object that is deemed irrelevant by the user [col. 8, lines 10-13].

Regarding on claim 5, Graham does not explicitly teach removing the keyword from the particular multimedia object in an event that the weight is less than a threshold value. However, Graham teaches, "the user adds to the list by selecting the keyword add button 828 which causes display of a dialog box (not shown) for entering the new keyword or key phrases. The user deletes a keyword or key phrase by selecting it and then selecting a keyword delete button 830" [col. 8, lines 54-58]. This teaches that the user have the ability to removing the keyword or key phrases. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham from the manual to an automatic annotation to allow the user less skill of the computer to effectively get the right results.

Regarding on claim 6, Graham teaches training how the first and second multimedia objects are identified based on the user's feedback [col. 7, lines 59-65].

Regarding on claim 7, Graham teaches refining the search to identify additional multimedia objects that contain content features similar to those of the multimedia objects indicated by the user as being relevant [col. 7, lines 3-5].

Regarding on claim 8, Amano teaches the multimedia objects comprise one of digital images, video objects, and audio objects [fig. 5].

Regarding on claims 10 and 17, Amano teaches a method comprising:

Iteratively retrieving multimedia objects from a database [page 204, right column, fig. 5]. Amano does not explicitly teaches monitoring feedback from a user to whether the multimedia objects are relevant to a keyword in a search query; and annotating the multimedia objects based on the user's feedback. However, Graham teaches, "the modification may occur in the background or may involve explicit user feedback input. The locations of concept if interest determined by pattern identification stage 620 are monitored by profile updating stage 634. Profile updating stage 624 notes the proximity of other keywords and key phrase within each analyzed document to the location of concepts of interest. If particular keyword or key phrases are always near a concept of interest, the structure and contents of belief system 700 are updated in the background without the user input by profile updating data. This could mean changing probability values, introducing a new connection between a subconcept and concept, or introducing a new keyword or key phrase" [col. 7, lines 52-65]. This teaches monitoring feedback from the user and annotated the multimedia with user's feedback. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham in to Amano because by utilizing the monitoring the user's feedback and an automatic annotator would allow the system to analyze the user's feedback and change the best describing keyword to the multimedia objects.

Regarding on claim 11, Amano teaches the retrieving comprises using content-based information retrieval to retrieve the multimedia objects [page 204, left column, lines 20-21].

Regarding on claim 12, Amano teaches the retrieving comprises using both content-based information retrieval and semantic-based information retrieval to retrieve the multimedia objects [page 204, left column, lines 31-33].

Regarding on claim 13, Graham teaches the monitoring comprises monitoring both feature-based relevance feedback and semantic-based relevance feedback [col. 7, lines 54-56].

Regarding on claim 14, Graham teaches the annotating is hidden from the user [col. 7, lines 52-54].

Regarding on claim 15, Graham teaches the annotating comprises:

in an event that a particular multimedia object is deemed relevant by the user and is not yet annotated with the keyword, adding the keyword to the particular multimedia object [col. 8, lines 6-10]; and

in an event that the particular multimedia object is deemed relevant by the user and is already annotated with the keyword, weakening an association between the keyword and the particular multimedia object [col. 8, lines 10-14].

Regarding on claim 16, Graham teaches the annotating comprises:

In an event that a particular multimedia object is deemed irrelevant by the user and is already annotated with the keyword, weakening an association between the keyword and the particular multimedia object [col. 8, lines 10-14].

Regarding on claims 18 and 24, Amano teaches method comprising:

retrieving multimedia objects according to a content-based retrieval process

[page 204, left column, lines 19-20];

presenting the multimedia object to a user [page 204, right column, fig. 5];

Amano does not explicitly teach monitoring feedback from the user as to which of the multimedia objects are relevant; and annotating one or more of the multimedia objects based on the user's feedback. However, Graham teaches, "the modification may occur in the background or may involve explicit user feedback input. The locations of concept of interest determined by pattern identification stage 620 are monitored by profile updating stage 634. Profile updating stage 624 notes the proximity of other keywords and key phrase within each analyzed document to the location of concepts of interest. If particular keyword or key phrases are always near a concept of interest, the structure and contents of belief system 700 are updated in the background without the user input by profile updating data. This could mean changing probability values, introducing a new connection between a subconcept and concept, or introducing a new keyword or key phrase" [col. 7, lines 52-65]. This teaches monitoring the feedback from the user and annotating by the user's feedback. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham in to Amano because by utilizing monitoring user's feedback and an automatic annotator would allow the next user to retrieve more precise search result.

Regarding on claim 19, Graham teaches the monitoring comprises monitoring both feature-based relevance feedback and semantic-based relevance feedback [col. 7, lines 54-56].

Regarding on claim 20, Graham teaches the annotating is hidden from the user [col. 7, lines 52-54].

Regarding on claim 21, Graham teaches the annotating comprise:

In an event that a particular multimedia object is deemed relevant by the user and not yet annotated with the keyword, adding the keyword to the particular multimedia object [col. 7, lines 64-65]; and

In an event that the particular multimedia object is deemed relevant by the user and is already annotated with the keyword, strengthening an association between the keyword and the particular object [col. 8, lines 6-10].

Regarding on claim 22, Graham teaches the annotating comprises:

In an event that a particular multimedia object is deemed irrelevant by the user and is already annotated with the keyword, weakening an association between the keyword and the particular multimedia object [col. 8, lines 10-14].

Regarding on claim 23, Graham teaches the annotating comprises:

In an event that a particular multimedia object is deemed irrelevant by the user and is already annotated with the keyword, removing the keyword from the particular multimedia object [col. 7, lines 64-65].

Regarding on claims 25 and 31, Amano teaches a method comprising:
maintaining association between keywords and multimedia objects, the associations being weight to indicate how relevant the keywords are to the multimedia objects [page 202, left column, fig. 1]; and
retrieving a set of one or more multimedia objects for presentation to a user [page 204, right column, fig. 5].

Amano does not explicitly teach monitoring feedback from the user as to which of the multimedia objects are relevant; and adjusting the weights of the associations based on the user's feedback. However, Graham teaches, "the modification may occur in the background or may involve explicit user feedback input. The locations of concept of interest determined by pattern identification stage 620 are monitored by profile updating stage 634. Profile updating stage 624 notes the proximity of other keywords and key phrase within each analyzed document to the location of concepts of interest. If particular keyword or key phrases are always near a concept of interest, the structure and contents of belief system 700 are updated in the background without the user input by profile updating data. This could mean changing probability values, introducing a new connection between a sub concept and concept, or introducing a new keyword or key phrase" [col. 7, lines 52-65]. This teaches monitoring feedback that the user input after they review the objects.

In addition, Graham also teaches, "if, on the other hand, user 504 indicates the selected keywords or key phrases to be of little interest, the probability values connecting these keywords or key phrases to the concept decrease" [col. 8, lines 10-14]. This teaches the adjusting the weight of the association between the keyword or key phrases based on the user. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham in to Amano because by utilizing the monitoring the user's feedback and adjusting mechanism to allow the system to change the new keyword that best describing the multimedia objects.

Regarding on claim 26, Amano teaches the retrieving comprises using content-based information retrieval to retrieve the multimedia objects [page 204, left column, lines 19-20].

Regarding on claim 27, Amano teaches the retrieving comprises using content-based information retrieval and semantic-based information retrieval to retrieve the multimedia objects [page 204, left column, lines 31-34].

Regarding on claim 28, Amano teaches the monitoring comprises capturing both feature-based relevance feedback and semantic-based relevance feedback [col. 7, lines 54-56].

Regarding on claim 29, Graham teaches the adjusting comprises increasing the weights of the association between the keywords and the multimedia objects that are deemed relevant by the user [col. 8, lines 6-10].

Regarding on claim 30, Graham teaches adjusting comprises decreasing the weights of the association between the keywords and the multimedia objects that are deemed irrelevant by the user [col. 8, lines 10-14].

Regarding on claim 32, Amano teaches a system comprising:

An information retrieval unit to retrieve multimedia objects from a database based on a search query [page 204, left column, lines 20-21]; and

Amano does not explicitly teaches relevance feedback unit to capture a user's feedback as to whether the multimedia objects are relevant to the search query; and an annotation unit to annotate the multimedia objects based on the user's feedback.

However, Graham teaches, "the modification may occur in the background or may involve explicit user feedback input. The locations of concept if interest determined by pattern identification stage 620 are monitored by profile updating stage 634. Profile updating stage 624 notes the proximity of other keywords and key phrase within each analyzed document to the location of concepts of interest. If particular keyword or key phrases are always near a concept of interest, the structure and contents of belief system 700 are updated in the background without the user input by profile updating data. This could mean changing probability values, introducing a new connection between a subconcept and concept, or introducing a new keyword or key phrase" [col. 7, lines 52-65]. This teaches monitoring unit analyzes the user's feedback and annotation unit change the new keyword to the objects. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Graham in to Amano because by utilizing the monitor unit and annotation units would allow the system to analyzes the user's feedback and change the new keyword that introduce by the user to the multimedia objects latter allow the other users to search and retrieve more precise results.

Regarding on claim 33, Amano teaches the search query comprises a keyword-based search query having one or more keywords [page 203, right column, lines 28-35].

Regarding on claim 34, Amano teaches the search query comprises a content-based search query having one or more content features [page 202, left column, lines 15-18].

Regarding on claim 35, Amano teaches the information retrieval unit employs both content-based (blue) information and semantic based information retrieval (lower) [page 204, left column, lines 32-34].

Regarding on claim 36, Amano teaches the information retrieval unit comprises:

A query handler to handle both keyword-based queries having one or more search keywords and content-based queries having one or more content features of a multimedia object [page 205, left column, lines 32-36]; and

A feature and semantic matcher to identify at least one of (1) first multimedia object having keywords that match the search keywords from a keyword-based query, and (2) second multimedia objects having content features similar to the content features of a content-based query [page 205, left column, lines 38-45 and right column, lines 1-16].

Regarding on claim 37, Graham teaches the relevance feedback unit employs both feature-based relevance feedback and semantic-based relevance feedback [col. 7, lines 54-56].

Regarding on claim 38, Graham teaches the search query comprise a keyword-based search query having at least one keyword; and in an event that a particular multimedia object is deemed relevant by the user and is not yet annotated with keyword, the annotation units adds the keyword to the particular multimedia object [col. 7, lines 54-65].

Regarding on claim 39, Graham teaches the search query comprises a keyword-based search query having at least one keyword; and in an event that a particular multimedia object is deemed relevant by the user and is already annotated with the keyword, the annotation unit strengthens an association between the keyword and the particular multimedia object [col. 8, lines 6-10].

Regarding on claim 40, Graham teaches the search query comprises a keyword-based search query having at least one keyword; and in an event that a particular multimedia object is deemed irrelevant by the user and is already annotated with the

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keyword, weakening an association between the keyword and the particular multimedia object [col. 8, lines 10-14].

Regarding on claim 41, Graham teaches the search query comprises a keyword-based search query having at least one keyword [page 203, right column, lines 28-35]; and in an event that a particular multimedia object is deemed irrelevant by the user and is already annotated with the keyword, removing the keyword from the particular multimedia object [col. 7, lines 64-66]

Regarding on claim 42, Graham teaches the relevance feedback unit comprises a feedback analyzer to train the system based on the user's feedback [col. 7, lines 61-65].

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US. Patent No. 6,041,335	Merrit et al.	March 21, 2000
US. Patent No. 6,301,586	Yang et al.	Oct 9, 2001
US. Patent No. 6,105,055	Pizano et al.	Aug 15, 2000
US. Patent No. 6,408,293	Aggarwal et al.	June 16, 2002

Contact Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y. Vu can be reached at (703) 305-4393.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231.


The fax numbers for the organization where this application or proceeding is assigned are as follow:

- (703) 746-7238 [After Final Communication]}
- (703) 746-7239 [Official Communication]
- (703) 746-7240 [Non-Official Communication]

Hand-delivered responses should be brought to:

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Baoquoc N. To
October 31, 2002


**SANJIV SHAH
PRIMARY EXAMINER**